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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,070	03/16/2004	Albert S. Wang	MS1-801USC4	5175

22801 7590 05/17/2006

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EXAMINER	
DIEP, NHON THANH	
ART UNIT	**PAPER NUMBER**
2621	

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/803,070	WANG, ALBERT S.	
	Examiner	Art Unit	
	Nhon T. Diep	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,17-20,33-36 and 49-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,17-20,33-36 and 49-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *3/16/2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 2/28/2006 have been fully considered but they are not persuasive.

With regard to the Applicant's argument (claim 1) that "The Office has failed to make out a prima facie case of obviousness. And that Shimada teaches directly away from the proposed combination or at the very least makes the proposed combination unnecessary since Shimada adjusts the quantization level by increasing +/- one percent and therefore, Shimada expresses no need whatsoever the use of damping factor (pages 8-10). The examiner respectfully disagrees. It is respectfully submitted that both Shimada et al and Widergren et al try to control the quantization step sized in encoding video signals and that in turn, control the overflow and underflow of the buffer memory. Shimada et al teaches the adjustment of Q by +/- one percent at a time based on the code quantity comparison. Widergren teaches the adjustment of Q by using the damping factor, which causes the Q adjustment varies in according to a curve, starting with a large factor number and gradually decreases to a much smaller value later, which not only keeps the data inside the buffer in rapid convergence but also allows one to use a small size buffer for a practical application and that the damping factor is strictly dependent upon buffer status. Since, that it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled would reasonably be expected to draw therefrom. It is the examiner's opinion that having these two references in front of him/her, one ordinary skilled level in the art

would have found it obvious to, at the very least, have an alternative way of control the Q adjustment by using damping factor as taught by Widergren et al to have a means to deal with sudden changes in the Q factor instead of a constant +/- one percent change of Shimada et al as a matter of trading off between better quality (Widergren et al) and lesser complexity system (Shimada et al).

With regard to the Applicant's argument (claims 17 and 33) that the motivation of expedite the encoding process is impermissible (page 11). The examiner respectfully disagrees. It is understandable that the Applicant does not like the motivation provided, however, using computer software to perform any video processing step such as encoding video signals is actually to save time and saving time is a legitimate reason for one skilled in the art to combine references.

With regard to the Applicant's argument (claim 50) that in making out the rejection of this claim, the Office argues that Shimada discloses most of the features of claim 50. The Office then relies on Legall and argues that it discloses the encoding analyzes both a first encoding adjuster and a second different encoding adjuster as recited in this claim. As a motivation for making this combination, the Office argues that the motivation would be to prevent a VBV buffer from being overflow. Consider, for example, the nature of Shimada's disclosure. Specifically, Shimada teaches a video compression coding apparatus, which can compress video data while suppressing any degradation of video quality. Col 2, lines 1 1-12. As such, from the start, Shimada teaches that its system compresses the video and maintains high quality. Shimada continues that input video data is quantized at a quantization level. To keep the

compressed video within a predetermined range, adjustments to the quantization level are made incrementally and are limited to changes of +/- one percent. This configuration obtains an appropriate control characteristic at all times to achieve more effective compression coding. Col. 5, lines 56-62. Thus, Shimada teaches the performance attributes of its incrementally controlled quantization level. Shimada is silent as to any shortcoming of its system or any need for first and second encoding adjusters as recited in claim 50. Shimada is equally silent as to any buffer overflow issues and instead specifically teaches that it at all times achieves more effective compression coding. Col. 5 lines 56-62. Effective compression coding is not associated with buffer underflow or overflow. Nonetheless, the Office looks to Legall to teach the missing claim feature. The Office argues that it would have been obvious to the skilled artisan to modify Shimada by employing the system of Legall as doing so would help to prevent a VBV buffer from being overflow. Shimada contains no indication or suggestion that its system of making incremental adjustments to a quantization level might result in buffer overflow. In fact, as described above, Shimada states that it can compress video data with high efficiency while suppressing the degradation of video quality" such as from buffer starvation and/or overflow. Shimada teaches the attributes of its incrementally adjusted quantization level and away from the Office's proposed combination with Legall. Legal is similarly silent as to how its first encoding adjuster and second encoding adjuster could be applied to Shimada's incrementally adjusted quantization level. For at least these reasons, Applicant respectfully submits that the Office has failed to establish a prima facie case of obviousness (page 13-15). First of all, the examiner respectfully disagrees

that "effective compression coding is not associated with buffer underflow or overflow". It is the examiner's position at all time that buffer underflow or overflow is critical in any coding system and that is one of the reason why one needs to control quantization step size, refer back to figure 5 of Shimada et al, it is the examiner's position that the Q adjustment is used to control the overflow or underflow of coded video bitrate although, Shimada et al may be silent about it. As indicated in the previous Office Action, Shimada et al does not particularly disclose that the encoding analyzes both a first encoding adjuster and a second different encoding adjuster and as is well known in the pertinent art, the total bit rate is calculated as the total bit rate of all macroblocks that make up the frame or the total bit rate of the GOP is calculated as the total bit rate of all individual frame and it is important to control the total bit rate per frame and then per GOPs to have a better picture quality at the end and that is why one needs to analyze both a first encoding adjuster and a second encoding adjuster, it is respectfully submitted that Legall provides that teaching because Legall teaches that "from step (1) a number of bits used to encode each frame in the input sequence in the first encoding pass is determined. Then, a bit budget for each frame in the sequence is determined from the number of bits used to encode each frame in the first pass such that (a) an overall target for the number of bits used to code the entire frame sequence is not exceeded, and (b) R.sub.max, a maximum channel bit rate, is not violated."(col. 6, ln. 49-60). Therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of Shimada et al by further analyzing the overall (a second encoding adjuster) bit target in addition to a first encoding adjuster

as taught by Legall et al. Doing so would help to prevent a VBV buffer from being overflow.

Since, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled would reasonably be expected to draw therefrom. It is the examiner's opinion that having these two references in front of him/her, one ordinary skilled level in the art would have found it obvious to, at the very least, further control the overall bit rate of a frame and GOPs to avoid the overflow or underflow buffer problem.

Having answer all of the Applicant's argument, the examiner maintain all of the rejections.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-4, 17-20, 33-36 and 49-51 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,118,817 as set forth in the previous Office Action.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Video Compression Coding (US 5,978,544) as cited by the applicant, in view of Widergren et al (US 4,394,744) as set forth in the previous Office Action.

6. Claims 17-20, 33-36 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al, in view of Widergren et al and further in view of Kumazawa et al (US 5,815,217) as set forth in the previous Office Action.

7. Claims 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Video Compression Coding (US 5,978,544) as cited by the applicant, in view of Legall et al (US 5,929,016) as set forth in the previous Office Action.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhon T. Diep whose telephone number is 571-272-7328. The examiner can normally be reached on m-f.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ND
5/15/2006

NHON DIEP
PRIMARY EXAMINER